

Trend Study 10R-29-99

Study site name: Massey Junction.

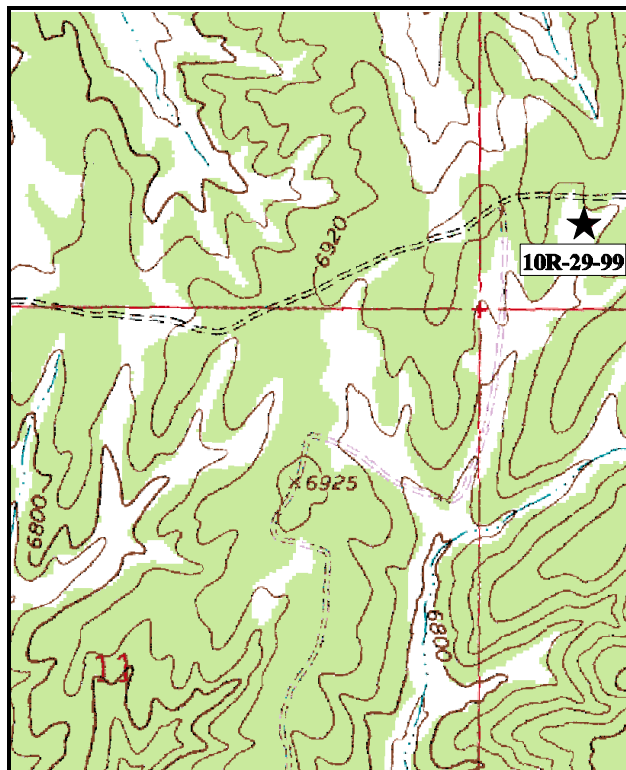
Range type: Big Sagebrush.

Compass bearing: frequency baseline 175°M.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1(11ft), line 2(34 ft), line 3(59 ft), line 4(71 ft) line 5 (95 ft).

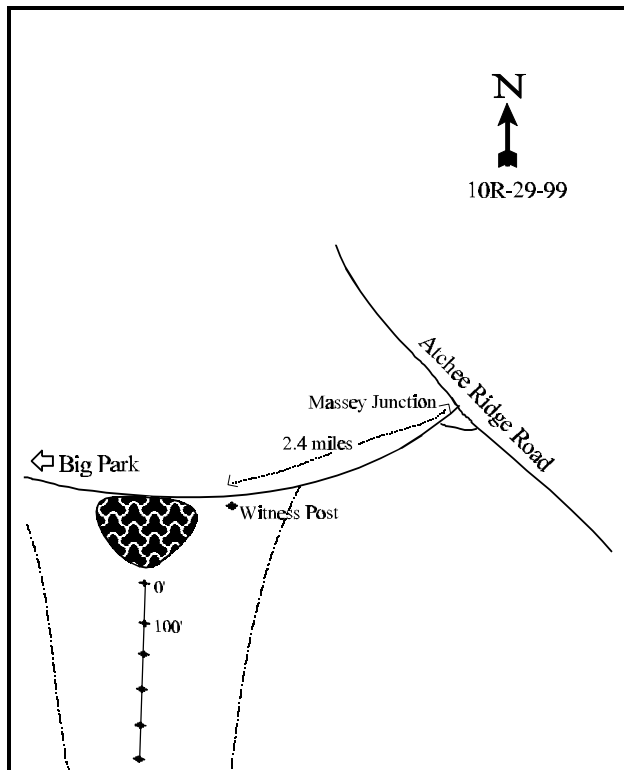
LOCATION DESCRIPTION

From Massey Junction off Atchee Ridge Road. Follow the road east towards Big Park 2.4 miles to a witness post on the left side of the road. From the witness post the 0' post is located down the canyon near the tip of the P-J Island separating the two drainages. The baseline continues down the draw.



Map name: Burnt Timber Canyon

Township 13 S, Range 24 E, Section 1.



Diagrammatic Sketch

UTM 4396959.412 N, 655569.419 E

DISCUSSION

Trend Study No. 10R-29

The Massey Junction trend study was established in 1999. It samples a narrow draw surrounded by a pinyon-juniper woodland. The draw was burned 10 to 15 years ago and now supports a salt desert shrub type. The site has a slight slope (3%) to the south and an elevation of approximately 7,000 feet. This area is used as winter range for deer and elk and grazed by cattle in the fall and spring. Pellet group data estimated 24 deer and 145 elk days use/acre (59 ddu/ha and 358 edu/ha). Cattle use was estimated at 36 days use/acre (89 cdu/ha). About one-half of the big game pellet groups and cattle pats were over one-year old. Rabbit pellets are also very common. This area is within the Atchee Ridge allotment which permits cattle grazing from June through September on a deferred rest rotation basis.

Soil at the site is moderately deep but compacted. Effective rooting depth is estimated at nearly 17 inches. There is little rock or pavement on the surface or within the soil profile. Soil texture is a clay loam with a soil reaction that is slightly alkaline (pH of 7.5). Organic matter is relatively high at 5.4%. Due to the abundant vegetation and litter cover, erosion is not significant at this time.

The site supports three preferred browse species: bud sage, fourwing saltbush, and winterfat. The largest shrub is fourwing saltbush which provides 60% of the browse cover. It numbers 2,100 plants/acre, 71% of which are large mature plants. Use is moderate to heavy yet vigor is normal on most plants and percent decadence is relatively low at 22%. The dead to live plant ratio is low (15 : 1). Winterfat is the most abundant shrub at a density of 10,780 plants/acre. These shrubs are short, averaging only 10 inches in height with a crown of only eight inches. Use is currently classified as light but may have been heavy in the past which kept these plants from growing taller. Most of the plants sampled are mature (93%) with young plants being fairly numerous. Bud sagebrush is abundant at 7,000 mostly mature plants/acre. Use is moderate to heavy with normal vigor. These shrubs are also short with mature plants averaging only seven inches in height with a crown diameter of seven inches. Continual use is likely the reason for this short height.

The herbaceous understory is abundant and dominated by thickspike wheatgrass which provides 78% of the grass cover and 76% of the total herbaceous cover. The only other common grass is cheatgrass. It is scattered throughout the site and accounts for 21% of the total grass cover. Forbs are rare with only two species being sampled, combined they produce only 1% cover.

1999 APPARENT TREND ASSESSMENT

There is little bare ground with abundant vegetation and litter cover to protect the soil. The key browse populations appear stable with good vigor, low percent decadence and adequate reproduction. The herbaceous understory is abundant and dominated by thickspike wheatgrass. There is some cheatgrass on the site, where it accounts for 21% of the grass cover. Forbs are rare on this site.

HERBACEOUS TRENDS --

Herd unit 10R, Study no: 29

| T y p e | Species | Nested Frequency '99 | Quadrat Frequency '99 | Average Cover % '99 |
|-----------------------------|-------------------------|--------------------------------|---------------------------------|-------------------------------|
| G | Agropyron dasystachyum | 428 | 97 | 26.81 |
| G | Bouteloua gracilis | 15 | 5 | .36 |
| G | Bromus tectorum (a) | 335 | 90 | 7.25 |
| G | Sitanion hystrix | 1 | 1 | .03 |
| Total for Annual Grasses | | 335 | 90 | 7.25 |
| Total for Perennial Grasses | | 444 | 103 | 27.20 |
| Total for Grasses | | 779 | 193 | 34.46 |
| F | Descurainia pinnata (a) | 12 | 6 | .03 |
| F | Sphaeralcea coccinea | 85 | 33 | .97 |
| Total for Annual Forbs | | 12 | 6 | 0.03 |
| Total for Perennial Forbs | | 85 | 33 | 0.97 |
| Total for Forbs | | 97 | 39 | 1.00 |

BROWSE TRENDS --

Herd unit 10R, Study no: 29

| T y p e | Species | Strip Frequency '99 | Average Cover % '99 |
|------------------|--------------------------------------|-------------------------------|-------------------------------|
| B | Artemisia spinescens | 50 | 2.03 |
| B | Artemisia tridentata wyomingensis | 1 | - |
| B | Atriplex canescens | 63 | 8.95 |
| B | Ceratoides lanata | 95 | 4.01 |
| B | Gutierrezia sarothrae | 3 | - |
| Total for Browse | | 212 | 15.00 |

BASIC COVER --

Herd unit 10R, Study no: 29

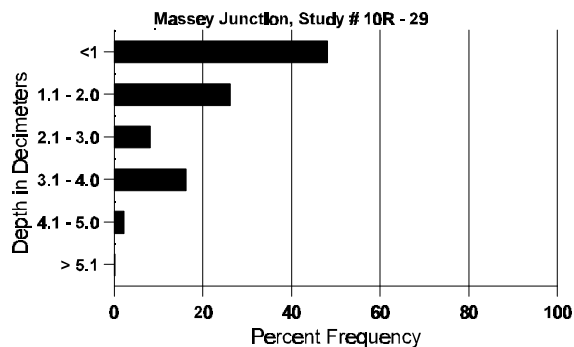
| Cover Type | Nested Frequency '99 | Average Cover % '99 |
|-------------|-------------------------|------------------------|
| Vegetation | 484 | 52.90 |
| Rock | 28 | .11 |
| Pavement | 191 | 3.76 |
| Litter | 484 | 49.88 |
| Cryptogams | 4 | .03 |
| Bare Ground | 267 | 12.93 |

SOIL ANALYSIS DATA --

Herd Unit 10R, Study # 29, Study Name: Massey Junction

| Effective rooting depth (inches) | Temp °F (depth) | pH | %sand | %silt | %clay | %OM | PPM P | PPM K | dS/m |
|-------------------------------------|--------------------|-----|-------|-------|-------|-----|-------|-------|------|
| 16.9 | 67.8 (18.0) | 7.5 | 28.9 | 34.6 | 36.6 | 5.4 | 17.1 | 336.0 | 0.8 |

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PELLET GROUP FREQUENCY --

Herd unit 10R, Study no: 29

| Type | Quadrat Frequency '99 | Pellet Transect | |
|--------|--------------------------|-------------------------------|-------------------------------|
| | | Pellet Groups per Acre '99 | Days Use per Acre (ha) '99 |
| Rabbit | 16 | 992 | N/A |
| Elk | 25 | 1174 | 90(222) |
| Deer | 19 | 208 | 16(40) |
| Cattle | 6 | 313 | 26(64) |

BROWSE CHARACTERISTICS --

Herd unit 10R, Study no: 29

| Artemisia spinescens | | | | | | | | | | | | | | | | | | |
|--|--------|----------------------------|----|----|------------------|---|----|-------------------|---|---|----------------|---|---|---|--------------------|--------------------------------|------|-------|
| A G E | Y R | Form Class (No. of Plants) | | | | | | | | | Vigor Class | | | | Plants Per Acre | Average (inches) Ht. Cr. | | Total |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | | | | |
| S | 99 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| Y | 99 | 13 | - | - | - | - | - | - | - | - | 13 | - | - | - | 260 | | | 13 |
| M | 99 | 202 | 84 | 44 | 6 | 1 | - | - | - | - | 337 | - | - | - | 6740 | 7 | 7 | 337 |
| % Plants Showing | | <u>Moderate Use</u> | | | <u>Heavy Use</u> | | | <u>Poor Vigor</u> | | | <u>%Change</u> | | | | | | | |
| '99 | | 24% | | | 13% | | | 00% | | | | | | | | | | |
| Total Plants/Acre (excluding Dead & Seedlings) | | | | | | | | | | | | | | | '99 | 7000 | Dec: | - |
| Artemisia tridentata tridentata | | | | | | | | | | | | | | | | | | |
| X | 99 | - | - | - | - | - | - | - | - | - | - | - | - | - | 400 | | | 20 |
| % Plants Showing | | <u>Moderate Use</u> | | | <u>Heavy Use</u> | | | <u>Poor Vigor</u> | | | <u>%Change</u> | | | | | | | |
| '99 | | 00% | | | 00% | | | 00% | | | | | | | | | | |
| Total Plants/Acre (excluding Dead & Seedlings) | | | | | | | | | | | | | | | '99 | 0 | Dec: | - |
| Artemisia tridentata wyomingensis | | | | | | | | | | | | | | | | | | |
| M | 99 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | 34 | 31 | 1 |
| X | 99 | - | - | - | - | - | - | - | - | - | - | - | - | - | 100 | | | 5 |
| % Plants Showing | | <u>Moderate Use</u> | | | <u>Heavy Use</u> | | | <u>Poor Vigor</u> | | | <u>%Change</u> | | | | | | | |
| '99 | | 00% | | | 00% | | | 00% | | | | | | | | | | |
| Total Plants/Acre (excluding Dead & Seedlings) | | | | | | | | | | | | | | | '99 | 20 | Dec: | - |
| Atriplex canescens | | | | | | | | | | | | | | | | | | |
| Y | 99 | 3 | 3 | - | 1 | - | - | - | - | - | 7 | - | - | - | 140 | | | 7 |
| M | 99 | 21 | 24 | 11 | 1 | 8 | 10 | - | - | - | 75 | - | - | - | 1500 | 33 | 41 | 75 |
| D | 99 | 4 | 9 | 4 | - | 1 | 5 | - | - | - | 16 | - | - | 7 | 460 | | | 23 |
| X | 99 | - | - | - | - | - | - | - | - | - | - | - | - | - | 140 | | | 7 |
| % Plants Showing | | <u>Moderate Use</u> | | | <u>Heavy Use</u> | | | <u>Poor Vigor</u> | | | <u>%Change</u> | | | | | | | |
| '99 | | 43% | | | 29% | | | 07% | | | | | | | | | | |
| Total Plants/Acre (excluding Dead & Seedlings) | | | | | | | | | | | | | | | '99 | 2100 | Dec: | 22% |
| Ceratoides lanata | | | | | | | | | | | | | | | | | | |
| Y | 99 | 35 | - | - | - | - | - | - | - | - | 35 | - | - | - | 700 | | | 35 |
| M | 99 | 401 | 28 | - | 53 | 6 | 14 | - | - | - | 502 | - | - | - | 10040 | 10 | 8 | 502 |
| D | 99 | - | - | - | - | 1 | 1 | - | - | - | 1 | - | - | 1 | 40 | | | 2 |
| % Plants Showing | | <u>Moderate Use</u> | | | <u>Heavy Use</u> | | | <u>Poor Vigor</u> | | | <u>%Change</u> | | | | | | | |
| '99 | | 06% | | | 03% | | | .18% | | | | | | | | | | |
| Total Plants/Acre (excluding Dead & Seedlings) | | | | | | | | | | | | | | | '99 | 10780 | Dec: | 0% |

| A G E | Y R | Form Class (No. of Plants) | | | | | | | | | Vigor Class | | | | Plants Per Acre | Average (inches) Ht. Cr. | Total |
|--|--------|----------------------------|---|---|-------------------------|---|---|--------------------------|---|---|----------------|-----|-----|------|--------------------|--------------------------------|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | | | |
| Gutierrezia sarothrae | | | | | | | | | | | | | | | | | |
| Y | 99 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | 1 |
| M | 99 | 4 | - | - | - | - | - | - | - | - | 4 | - | - | - | 80 | 6 6 | 4 |
| % Plants Showing '99 | | <u>Moderate Use</u> 00% | | | <u>Heavy Use</u> 00% | | | <u>Poor Vigor</u> 00% | | | <u>%Change</u> | | | | | | |
| Total Plants/Acre (excluding Dead & Seedlings) | | | | | | | | | | | | '99 | 100 | Dec: | - | | |